AMENDMENTS TO THE CLAIMS

1. (Original) A manipulation system for cardiac surgery of the class wherein a gross support means for engaging a beating heart supports the heart when the heart is located and oriented for surgery, wherein the improvement comprises:

the gross support means being located at the base of the heart and including a head which is sized and shaped to cradle the myocardium of the left ventricle along the arterialventricular groove; and

a suspension head for lifting the heart and which is located near the apical region of the heart and at least partially overlying the right ventricle.

Claims 2-16 (Canceled) Please cancel claims 2-16 without prejudice to the possibility of filing one or more continuing applications directed to the subject matter recited therein.

17. (Original) A heart manipulation system for use in cardiac surgery comprising:

a frame that is located inside a patient during beating heart surgery and which includes means for engaging the pericardial cavity of the patient for mounting said frame on the patient to move with the patient if the patient is moved or re-oriented during surgery;

a source of suction;

a suspension head movably mounted on said frame for lifting the heart and which is located near the apical region of the right ventricle to prevent collapse of the right ventricle during manipulation of the heart and at least partially overlying the right ventricle and which includes a flexible means for permitting multiplanar relative movement between the beating heart and means mounting the suspension head on said frame means, said suspension head including a suction cup connected to the source of suction and which includes a flexible rim engaging the myocardium of the heart and being flexible in a plurality of planes so multiplanar movement of the myocardium during operation of the heart will be accommodated by said flexible rim whereby suction applied to the myocardium by said suction cup will not be broken by separation of the myocardium from the suction cup, said suction cup further including mesh grid means for preventing heart tissue form interfering with suction being applied to the myocardium via said suction cup;

a means for locally engaging a selected section of the heart and locally immobilizing the heart adjacent to a surgery target so the heart is supported and free to operate during surgery while it is also locally immobilized at the surgery target with non-engaged sections of the heart free to move in a

manner whereby essentially unabated cardiac output is maintained while the heart is locally immobilized, and further including a suction cup connected to the source of suction and which includes a flexible rim engaging the myocardium of the heart and being flexible in a plurality of planes so multiplanar movement of the myocardium during operation of the heart will be accommodated by the flexible rim of said means for locally engaging a selected section of the heart whereby suction applied to the myocardium by the suction cup of said means for locally engaging a selected section of the heart will to be broken by separation of the myocardium from the suction cup of said means for locally engaging a selected section of the heart, said suction cup of said means for locally engaging a selected section of the heart further including mesh grid means for preventing heart tissue from interfering with suction being applied to the myocardium via said suction cup of said mean for locally engaging a selected section of the heart; and

a gross support means movably mounted on said frame for engaging the heart to support the heart when the heart is oriented for surgery and which is located at the base of the heart and which cradles the myocardium of the left ventricle along the arterialventricular groove and which includes means for movably connecting said gross support means to said frame, the gross support means supporting the mitral valve annulus to maintain competent mitral valve function and is placed beneath an infolded section of myocardium, said gross support means including a handle which extends outside of the patient during surgery for adjusting the location of said gross support means, and further including a head having a malleable rod means for connecting said head to said means for mounting said gross support means on said frame, said head including a plurality of sections which are movable relative to each other and means for maintaining said sections in a selected relative orientation, said head further including a means for applying suction from said source of suction to the heart and which includes mesh grid means for preventing heart tissue from interfering with suction applied by said suspension head to the heart.

Claims 18-71 (Canceled) Please cancel claims 18-71 without prejudice to the possibility of filing one or more continuing applications directed to the subject matter recited therein.

72. (Original) A method for manipulating a heart during cardiac surgery comprising:

engaging the heart near the apical region of the right ventricle and preventing collapse of the right ventricle;

lifting the heart into a position and orientation for surgery using the engagement near the apical region; and

maintaining engagement of the heart while the heart and its myocardium move during essentially unabated operation of the heart.

73. (Original) The method defined in claim 72 further including a step of engaging the heart near the left ventricle along the arterialventricular groove.

74. (Original) The method defined in claim 73 further including a step of lifting and rotating the heart to a preferred surgical access position while supporting the mitral valve annulus to maintain competent mitral valve function.

75. (Original) The method defined in claim 72 further including a step of immobilizing a surgical target of the heart while non-immobilized sections of the heart move to maintain essentially unabated cardiac output.

76. (Currently Amended) The heart manipulation system defined in claim 17 wherein said means for locally engaging a selected section of the heart further includes a handle means which extends outside of the patient during surgery for adjusting the location and position of said means for locally engaging a selected section of the heart and moving the selected section into a desired position and ~~orientation,~~ orientation.